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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,737	09/26/2006	Juha T. Rantala	LAIN-077	4463
20374 7590 09/02/2010 KUBOVCIK & KUBOVCIK SUITE 1105 1215 SOUTH CLARK STREET ARLINGTON, VA 22202				
EXAMINER ZIMMER, MARC S				
ART UNIT		PAPER NUMBER		
1796				
MAIL DATE		DELIVERY MODE		
09/02/2010		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/552,737

**Applicant(s)**

RANTALA ET AL.

**Examiner**

MARC S. ZIMMER

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) See Continuation Sheet is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☒ Claim(s) 41 is/are allowed.
- 6) ☒ Claim(s) 10 and 29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/11/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

Continuation of Disposition of Claims: Claims pending in the application are 1, 10, 29, 41, 57, 59, 68, 85, 99, 108, 113, 122, 127, 134, 139, 148, 153, 160, 164 and 167.  
Continuation of Disposition of Claims: Claims withdrawn from consideration are 1, 57, 59, 68, 85, 99, 108, 113, 122, 127, 134, 139, 148, 153, 160, 164 and 167.

***Election/Restrictions***

In a correspondence mailed December 22, 2009, Examiner Rider outlined a multi-way restriction of the claimed invention. The rationale for restriction appeared to be that there was taught in a reference a compound embraced by all of the claims, i.e. 4-fluorobenzyltrichlorosilane. (The present Examiner disagrees as there are at least some claims for which this species would not have been encompassed but, on the other hand, this only serves to bolster the position taken by the present Examiner herein.) In response to the restriction requirement, Applicant has improperly inserted an unsupported negative limitation, unsupported to the extent that it seemingly was never expressly disclosed anywhere in the original description, excluding this compound as a means of obviating the restriction requirement.

The difficulty with examining the claims of the instant application, or even determining how best to divide the claims for the purpose of yielding a set of claims that is not overly burdensome to search, stems, in part, from the fact that the species embraced by each of the independent claims are not homogeneous throughout. As an illustration of the differences, consider the following:

- (i) whereas R<sup>1</sup> is merely identified as a "substituent" of R<sup>2</sup> in claim 10, claim 1 defines this structural attribute as being one of a few specific types of organic moiety,
- (ii) while the Examiner imagines that Applicant would purport that the method of claim 57 represents a synthetic approach for making a subset of all the compounds embraced

by claim 1, it is notable that some of the compounds prepared by the method of claim 57, i.e. those where  $R^1$  may connote an hydroxyl group, are not included in the genus of compounds embraced in claim 1,

(iii) claims 68 and 113, for example, are not overlapping in their scope in that the definitions of  $R^2$  are wholly different and potentially do not overlap at all in scope though it is acknowledged that each is encompassed by the far broader description of claim 1. The same observation could be made of numerous pairs of independent claims set out in the instant application.

Furthermore, it is not the case that the claims are necessarily linked as the Applicant alleges. While Applicant asserts, for instance, that the silane of claim 1 and the polysiloxane of claim 10 should be searched together because the polymers of claim 10 are made from the monomers of claim 1, it simply is not true that the polymer(s) of claim 10 are necessarily made by polymerizing the silanes of claim 1 because there is nothing in claim 10 mandating silsesquioxane structure or the presence of repeat units that could only be derived from the aforementioned silanes and, thus, the claimed siloxane conceivably could be made instead by ring-opening a cyclosiloxane bearing similar groups  $R^1$ - $R^2$ -. Since claims 1 and 10 are not inextricably linked, there cannot be said to be unity of invention between them. As another example, claims 10 and 29 do not necessarily have to be linked insofar as the "carbon chain crosslinking groups" of claim 10 are conceivably obtained by preparing a

polysiloxane precursor bearing both  $R^1$ - $R^2$ - groups and Si-H groups and then crosslinking by hydrosilylation with an  $\alpha,\omega$ -diene.

In light of all the matters noted herein, the Examiner believes that separation of the claims was indeed appropriate but the present Examiner would have taken an entirely different approach to trying to reduce the scope of the claimed invention to a manageable level by asking for an election of an expressly-supported permutation of  $R^1$  and  $R^2$  and, where relevant,  $R^3$  and letting Applicants' election dictate which claims would be initially examined. It is noted that Applicant has, in fact, made such an election at the bottom of page 16 of their May 24, 2010 correspondence and, thus, the Examiner began his search with an attempt to ascertain the patentability of siloxane polymers having structural attributes consistent with Applicants' election. That is, the Examiner searched for an inorganic-organic copolymer consistent with that described in claim 10 wherein  $R^1$ - $R^2$  connoted a pentafluorophenylmethyl group.

The Examiner did not, however, find an inorganic-organic polymer derived from a silane condensate that included pentafluorophenylmethyl substituents and, thus, the Examiner broadened his search to try and include any of the inorganic-organic copolymers embraced by claim 10 where  $R^2$  symbolized a phenyl ring. It should be noted that the particular groups inserted into claim 10 with the last amendment are expressed merely as being particular embodiments of  $-R^1$ - $R^2$  and the claimed polymer is not confined to those containing one of these substituents as indicated by the employment of the conjunction "or". To the extent that claim 29 bears an intermediate-

final product relationship with the subject matter of claim 10, there being a strong probability that the disclosure of one or more compounds of claim 29 would be accompanied by the mention of the polymerization of its alkenyl/acrylic/epoxy groups, the Examiner has deemed it appropriate to examine claims 10 and 29 together.

Claims 1, 57, 59, 68, 85, 99, 108, 113, 122, 127, 134, 139, 148, 153, 160, 164, and 167 are withdrawn as being directed to inventions not sharing unity of invention with claims 10, 29, and 41 for the reasons related *supra*. The Examiner wishes to emphasize, however, that, should Applicant manage to overcome the rejection of claims 10 and 29, the Examiner believes it would be appropriate to continue with a search for the inventions outlined in claims 41, 68, 85, 99, 113, 122, 127, 139, 148, and 153 as they have been deemed to also embrace inorganic/organic co polymers similar to those of claim 10, i.e. polysiloxanes (I) bearing groups  $-R^1-R^2$  where  $R^1$  is an aryl group and  $R^2$  is a substituent attached at a specified position of the aromatic ring and (II) having carbon chains forming crosslinks between the discrete polysiloxane molecules or precursors of said copolymers.

Though not formally rejected herein due to their status as withdrawn claims, Applicant is advised that claims 68, 85, and 99 are viewed as being problematic because it is difficult to fully anticipate what residues are encompassed by the description of these claims and, further, the numbering scheme Applicant would propose to use to assign the different positions. A more concise description of these

permutations of  $R^1-R^2$ -, preferably way of the enumeration of examples would be appropriate. Also, in claim 68,  $R^1$  is depicted as being divalent but the description of this variable that follows makes clear that it is monovalent and the bound substituent should instead be represented as  $R^1-R^2$ -.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 10 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Roscher et al., U.S. Patent # 5,973,176. Example 3 discloses a silane co-condensate derived from 40 mol% of (bis)pentafluorophenyldiethoxysilane which would provide substituents  $R^1-R^2$ - where  $R^1$  is a fluorine atom and  $R^2$  is a phenyl ring. Although there is no description of the subsequent polymerization of the vinyl groups furnished by methylvinyltriethoxysilane, this manipulation of the polymer to provide carbon chain crosslinks between the heteropolycondensates is contemplated both at columns 23-24 and again at columns 29-30.

### ***Allowable Subject Matter***

Claim 41 is allowable.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARC S. ZIMMER whose telephone number is (571)272-1096. The examiner can normally be reached on Monday-Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jim Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

August 30, 2010

/Marc S. Zimmer/  
Primary Examiner, Art Unit 1796